

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

Listing of Claims:

Claim 1 (Currently Amended): An optical system for an image display apparatus,
comprising:

a curvature of field correcting optical system; and

an imaging optical system for imaging a one-dimensional image on an image surface
by regarding as an object configured to pass a bundle of rays from a light modulator element
which has including light modulator parts arranged one-dimensionally in a first direction, and
regarding a bundle of rays from the light modulator element as an object light, configured to
image a one-dimensional image on an image surface via said curvature of field correcting
optical system,

said imaging optical system comprising[[:]] at least two anamorphic surfaces each
having radii of curvature which are different on an object surface in the first direction and a
second direction which is perpendicular to the first direction on an object surface, so that
imaging surfaces in takes place on a single imaging surface for both the first and second
directions match to thereby form a two-dimensional image on the image surface.

Claim 2 (Currently Amended): The ~~imaging~~ optical system as claimed in claim 1,
wherein at least one of said at least two anamorphic surfaces has a bent axis toroidal surface
with a non-arcuate shape within a cross section cut along the first direction, and a curvature
center line of the bent axis toroidal surface formed by joining centers of curvature of cross
sections cut along the second direction is a curve.

Claim 3 (Currently Amended): The ~~imaging~~ optical system as claimed in claim 1, wherein at least one of said at least two anamorphic surfaces has a first non-arcuate shape within a cross section cut along the first direction, and a second non-arcuate shape within a cross section cut along the second direction, and said second non-arcuate shape is ~~variable~~ formed depending on a coordinate of thereof in the first direction.

Claim 4 (Currently Amended): The ~~imaging~~ optical system as claimed in claim 1, wherein an imaging magnification M_v in the first direction and an imaging magnification M_h in the second direction satisfy a relationship $|M_v/M_h| > 1$.

Claim 5 (Currently Amended): The ~~imaging~~ optical system as claimed in claim 4, wherein a principal point in the first direction is set at a position closer to the light modulator element than that of a principal point in the second direction, through the entire imaging optical system.

Claim 6 (Currently Amended): The ~~imaging~~ optical system as claimed in claim 1, ~~which~~ wherein said imaging optical system is approximately telecentric in the first direction on a side closer to the light modulator element.

Claim 7 (Currently Amended): The ~~imaging~~ optical system as claimed in claim 1, further comprising:

a stopper arranged closer to the imaging surface than the light modulator element.

Claim 8 (Currently Amended): The ~~imaging~~ optical system as claimed in claim 1, ~~comprising~~ wherein said imaging optical system comprises:

an imaging system formed by a plurality of lenses, and

~~wherein~~ at least two of the plurality of lenses have different focal distances in the first and second directions, focal distances which differ in the first and second directions for the entire imaging optical system, and different imaging magnifications on the image surface.

Claim 9 (Currently Amended): The ~~imaging~~ optical system as claimed in claim 8, wherein at least one of the plurality of lenses arranged closer to the imaging surface than the light modulator element has a power P_{iv} in the first direction and a power P_{ih} in the second direction which satisfy a relationship $P_{iv} < P_{ih}$, and at least one of the plurality of lenses arranged closer to the light modulator element than the imaging surface has a power P_{ov} in the first direction and a power P_{oh} in the second direction which satisfy a relationship $P_{ov} > P_{oh}$.

Claim 10 (Currently Amended): An image display apparatus comprising:

a light modulator element ~~which has~~ including light modulator parts arranged one-dimensionally in a first direction;

a curvature of field correcting optical system;

an imaging optical system ~~to image a one-dimensional image on an image surface by regarding said light modulator element as an object and regarding~~ configured to pass a bundle of rays from the light modulator element ~~as an object light, to image a one-dimensional image on an image surface via said curvature of field correcting optical system,~~ said imaging optical system including at least two anamorphic surfaces each having radii of curvature ~~which are~~ different ~~on an object surface~~ in the first direction and a second direction ~~which is~~ perpendicular to the first direction on an object surface, so that imaging ~~surfaces in~~ takes

place on a single imaging surface for both the first and second directions match to thereby form a two-dimensional image on the image surface; and

a display section configured to display an image on a display surface by imaging the one-dimensional image on the display surface via said imaging optical system and said curvature of field correcting optical system, and relatively scanning the one-dimensional image and the display surface in a direction perpendicular to a longitudinal direction of the one-dimensional image.

Claim 11 (Currently Amended): The image display apparatus as claimed in claim 10, wherein said light modulator element comprises:

a first modulator element ~~having~~ including light modulator parts with spectral characteristics for red (~~R~~) color and arranged one-dimensionally in the first direction;

a second modulator element ~~having~~ including light modulator parts with spectral characteristics for green (~~G~~) color and arranged one-dimensionally in the first direction; and

a third modulator element ~~having~~ including light modulator parts with spectral characteristics for blue (~~B~~) color and arranged one-dimensionally in the first direction,

said first, second and third modulator elements being arranged parallel to each other so that each of the first, second and third modulator elements is adjacent to at least one of the first, second and third modulator elements.

Claim 12 (Currently Amended): The image display apparatus as claimed in claim 11, wherein said display section overlaps the red (~~R~~), green (~~G~~) and blue (~~B~~) colors with a timing difference to perform a color composite on the same pixel imaging position when relatively scanning the one-dimensional image and the display surface.

Claim 13 (Currently Amended): The image display apparatus as claimed in claim 10, wherein said display section comprises:

a deflecting section configured to deflect an imaged bundle of rays obtained via said imaging optical system, so as to scan the one-dimensional image with respect to the display surface which is planar; and

a said curvature of field correcting optical system[[,]] is disposed between the deflecting section and the display surface, to substantially match an image surface of the imaged bundle of rays deflected and scanned by the deflecting section to the display surface.

Claim 14 (Withdrawn): An imaging optical apparatus comprising:

a light modulator element comprising a first modulator element having light modulator parts with spectral characteristics for red (R) color and arranged one-dimensionally in a first direction, a second modulator element having light modulator parts with spectral characteristics for green (G) color and arranged one-dimensionally in the first direction, and a third modulator element having light modulator parts with spectral characteristics for blue (B) color and arranged one-dimensionally in the first direction, said first, second and third modulator elements being arranged parallel to each other so that each of the first, second and third modulator elements is adjacent to at least one of the first, second and third modulator elements; and

an imaging optical system to image lights from the first, second and third modulator elements of said light modulator element one-dimensionally on a common display surface,

a length of an imaging optical path for at least one of the colors being different from those of imaging optical paths for the other two colors, so as to correct differences in magnifications in a direction corresponding to the first direction caused by color aberration.

Claim 15 (Withdrawn): The imaging optical apparatus as claimed in claim 14, wherein a physical distance of at least one of the first, second and third modulator elements from said imaging optical system along an optical axis of said imaging optical system is different from those of the other two modulator elements.

Claim 16 (Withdrawn): The imaging optical apparatus as claimed in claim 14, wherein:

the modulator parts of each of the first, second and third modulator elements are arranged on the same plane so that physical distances of the first, second and third modulator elements from said imaging optical system along an optical axis of said imaging optical system are approximately the same, and

said imaging optical apparatus comprising:

a first transparent plate disposed adjacent to and parallel to the first modulator element;

a second transparent plate disposed adjacent to and parallel to the second modulator element; and

a third transparent plate disposed adjacent to and parallel to the third modulator element,

one of the first, second and third transparent plates having a thickness different from those of the other two transparent plates, so as to mutually correct lengths of imaging optical paths respectively through the first, second and third transparent plates.

Claim 17 (Withdrawn): The imaging optical apparatus as claimed in claim 14, wherein lengths of imaging optical paths with respect to the second and third modulator elements are approximately the same, and a length of an imaging optical path with respect to

the first modulator element is longer than the lengths of the imaging optical paths with respect to the second and third modulator elements.

Claim 18 (Withdrawn): The imaging optical apparatus as claimed in claim 14, wherein the second modulator element is disposed adjacent to an optical axis of said imaging optical system, and the first and third modulator elements are disposed to sandwich the second modulator element in a second direction perpendicular to the first direction.

Claim 19 (Withdrawn): An image display apparatus comprising:
a light modulator element comprising a first modulator element having light modulator parts with spectral characteristics for red (R) color and arranged one-dimensionally in a first direction, a second modulator element having light modulator parts with spectral characteristics for green (G) color and arranged one-dimensionally in the first direction, and a third modulator element having light modulator parts with spectral characteristics for blue (B) color and arranged one-dimensionally in the first direction, said first, second and third modulator elements being arranged parallel to each other so that each of the first, second and third modulator elements is adjacent to at least one of the first, second and third modulator elements;

an imaging optical system to image lights from the first, second and third modulator elements of said light modulator element one-dimensionally on an image surface; and

a display section to display an image on a display surface by imaging the one-dimensional image on the display surface via said imaging optical system and relatively scanning the one-dimensional image and the display surface in a direction perpendicular to a longitudinal direction of the one-dimensional image,

a length of an imaging optical path for at least one of the colors being different from those of imaging optical paths of the other two colors, so as to correct differences in magnifications in a direction corresponding to the first direction caused by color aberration.